P21902.S02

WHAT IS CLAIMED:

1. A lamella of a headbox through which at least one fibrous suspension flows, the headbox having a machine-width headbox nozzle with a nozzle length and an exit opening, and the headbox nozzle being delimited by an upper nozzle wall and a lower nozzle wall, said lamella, which is structured and arranged to be mounted within the headbox nozzle, comprising:

a lamella body having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and

said downstream lamella end comprising a first surface, a portion coupled to an sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a structure.

2. The lamella in accordance with claim 1, wherein the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine.

3. The lamella in accordance with claim 1, wherein said first surface is structured and arranged to be positioned to face one of the nozzle walls.

4. The lamella in accordance with claim 1, wherein said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface.

5. The lamella in accordance with claim 4, wherein said angle is between about 2.5° to 5°.

6. The lamella in accordance with claim 1, wherein said downstream lamella end has a height of between about ~~0.4~~ 0,3 mm and ~~0.6~~ 1,0 mm.

7. The lamella in accordance with claim 6, wherein the height is between 0,4 about ~~0.5~~ mm. and 0,6 mm.

8. The lamella in accordance with claim 6, wherein said height is

H.L. 02-02-0
K.F. 02-02-01
W.R. 02-02-01

determined from a distance between an end of said sloped portion and said second surface.

9. The lamella in accordance with claim 1, wherein said lamella has a predominant lamella thickness of between about 2 mm and 6 mm.

10. The lamella in accordance with claim 9, wherein said predominant thickness is about 4 mm.

11. The lamella in accordance with claim 1 in combination with the headbox, wherein said lamella is located within the headbox nozzle and the upper nozzle wall in the area of the exit opening is coupled to an adjustable screen, and wherein said sloped portion is positioned toward the adjustable screen.

12. The lamella in accordance with claim 1, wherein said structure comprises grooves having at least one of:

(A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, ~~and~~ H.L. 02-02-01

(B) varying depth, and K.F. 02-02-01

(C) varying spacing.

13. The lamella in accordance with claim 1, wherein said lamella is composed of at least one high-performance polymer. W.R. 02.02.01

14. The lamella in accordance with claim 13, wherein said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU).

15. The lamella in accordance with claim 1, wherein said lamella has a length that is at least about 80% of the nozzle length.

16. The lamella in accordance with claim 1 in combination with the headbox, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about ~~5~~ 3 m/s. H.L. 02-02-01 K.F. 02.02.01

17. The lamella in accordance with claim 1, wherein said lamella is W.R 02-02.01

structured and arranged to be mounted in a headbox with sectioned consistency control.

18. The lamella in accordance with claim 1, wherein said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s.

19. The lamella in accordance with claim 18, wherein the stream velocity is more than about 1,800 m/s.

20. The lamella in accordance with claim 1, wherein said lamella is structured and arranged to be mounted in a multi-layer headbox.

21. The lamella in accordance with claim 20, wherein said lamella is structured and arranged to be an intermediate lamella.

22. A headbox for supplying at least one fibrous suspension flows, comprising:

a headbox nozzle having an exit opening, said headbox nozzle and said exit opening being delimited by an upper nozzle wall and a lower nozzle wall;

a lamella mounted within said headbox nozzle having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and

said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a structure.

23. The headbox in accordance with claim 22, wherein said first surface is structured and arranged to be positioned to face one of the nozzle walls.

24. The headbox in accordance with claim 22, wherein said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface.

25. The headbox in accordance with claim 24, wherein said angle is

between about 2.5° to 5°.

26. The headbox in accordance with claim 22, wherein said downstream lamella end has a height of between about 0.4 mm and 0.6 mm.

27. The headbox in accordance with claim 26, wherein the height is about 0.5 mm.

28. The headbox in accordance with claim 26, wherein said height is determined from a distance between an end of said sloped portion and said second surface.

29. The headbox in accordance with claim 22, wherein said lamella has a predominant lamella thickness of between about 2 mm and 6 mm.

30. The headbox in accordance with claim 29, wherein said predominant thickness is about 4 mm.

31. The headbox in accordance with claim 22, further comprising an adjustable screen coupled to said upper nozzle wall,

wherein said sloped portion is positioned toward the adjustable screen.

32. The headbox in accordance with claim 22, wherein said structure comprises grooves having at least one of:

(A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, ~~and~~

(B) varying depth, and

(C) varying spacing.

33. The headbox in accordance with claim 22, wherein said lamella is composed of at least one high-performance polymer.

34. The headbox in accordance with claim 33, wherein said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU).

35. The headbox in accordance with claim 22, wherein said nozzle has a

H.L. 02-02-01
K.F. 02-02-01
W.R. 02.02.01

nozzle length and said lamella has a length that is at least about 80% of said nozzle length.

36. The headbox in accordance with claim 22, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about ~~5~~ 3 m/s.

37. The headbox in accordance with claim 22, wherein said headbox is structured and arranged for sectioned consistency control.

38. The headbox in accordance with claim 22, wherein said headbox designed for a stream velocity of more than about 1,500 m/s.

39. The headbox in accordance with claim 38, wherein the stream velocity is more than about 1,800 m/s.

40. The headbox in accordance with claim 22, wherein said headbox comprises in a multi-layer headbox.

41. The headbox in accordance with claim 40, wherein said lamella is structured and arranged to be an intermediate lamella.

42. The headbox in accordance with claim 22, wherein said lamella is fixedly mounted in said headbox nozzle.

43. The headbox in accordance with claim 22, wherein said lamella is pivotably mounted in said headbox nozzle.

44. A lamella for a headbox in a fibrous material web production machine, comprising:

a lamella body having a first and second surface and a mountable end and a downstream end remote from said mountable end;

said downstream end comprising a sloped surface obliquely oriented with respect to and coupled to said first surface and a structure provided at least one of in and on said second surface.

P21902.S02

45. The lamella in accordance with claim 44, wherein said sloped surface is obliquely oriented relative to said first surface at an angle of between about 1.5° to 6° to said first surface.

46. The lamella in accordance with claim 45, wherein said structure comprises grooves having at least one of:

(A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, ~~and~~ H.L. 02-02-01

(B) varying depth, and W.R. 02.02.01

(C) varying spacing. K.F. 02-02-01

47. The lamella ~~in~~ accordance with claim 44, wherein said downstream lamella end has a height, determined from a distance between an end of said sloped portion and said second surface, of between about ~~0.4~~ 0.3 mm and ~~0.6~~ 1.0 mm. H.L. 02-02-01 W.R. 02.02.01 K.F 02-02-01

48. The lamella in accordance with Claim 1, wherein the first surface is provided with a structure. K.F. 02-02-01 W.R. 02-02-01 H.L. 02-02-01

49. The headbox in accordance with Claim 22, wherein the first surface is provided with a structure. K.F. 02-02-01 W.R. 02-02-01 H.L. 02-02-01

50. The lamella in accordance with Claim 44, wherein the first surface is provided with a structure. H.L. 02-02-01 W.R. 02-02-01 K.F. 02-02-01